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Telecommunication Peripheral Products

Technical Practice

ACA-1A
Single Port Automated
Call Attendant
March 11, 1999

Affordable, User-Friendly Auto-Attendants For Centrex, PABX and Many Key Systems

The **ACA-1A** Automated Attendant provides a professional solution for increasing call handling capacity without adding costly staff. The **ACA-1A** answers promptly and courteously and allows callers to route themselves, with a Touch Tone phone, to an extension or department. **Callers can interrupt the message at any time** by dialing a single digit or extension. Callers without Touch Tone phones default to a live attendant.

The **ACA-1A** is a single-port Automated Attendant with a user recordable digital voice announcer. **One minute** of non-volatile digital memory is available to provide a greeting and a menu of up to 10 departments or extensions.

⚠ This product does not eliminate the possibility of toll fraud! To further protect against fraudulent calls, use with a TR-1 toll restrictor (Fax Back Document 705).

http://www.VikingElectronics.com
E-mail...Sales@VikingElectronics.com

Features

- **Non-volatile E² memory** - no batteries required for memory retention during power failures
- **Remote or local recording**
- **Bilingual capabilities -** allows menu selection in two languages
- **Programmable ring delay**
- Professionally greets and processes calls
- Compatible with Centrex, PBX, Hybrid Key and many electronic key systems with OPX or single line station capabilities
- Stores up to (9) 16 digit speed dial numbers and **(1) 32 digit number**
- Processes approximately four calls per minute (stack as many units as necessary for larger capacity)
- Record announcements with a standard carbon handset or tape player
- Separate announcements for greeting/menu selection, confirmation and busy extension
- Blocks 8+ and 9+ dialing
- Touch Tone interruptible announcement
- Default speed dial position for non Touch Tone phones
- **CPC detection**

Applications

- Increase call capacity without adding staff

- Operator back-up during high-traffic hours

- Use as the first level of a multi-level announcer with additional **ACA-1A**'s

Specifications

Power: 120V AC/12V DC 500mA, UL listed adapter provided
Shipping Weight: 1.0 Kg (2.2 lbs)
Environmental: 0° C to 32° C (32° F to 90° F) with 5% to 95% non-condensing humidity
Hook Switch Flash: 512 ms ± 50 milliseconds
Busy Detect Cadence: 200ms - 300ms or 450ms - 550ms on/off
Speed Dial Timing: 120ms on/off (typical) - normal, 60ms on/off (typical) - fast
Answer Message Default Time-out: 6 seconds
Busy Message Default Time-out: 2.5 seconds
Message Length: 1 minute
Sampling Rate: 64K (equivalent)
Connections: (1) RJ11 jack, (1) 3.5mm (1/8") tape jack, (1) modular handset jack

Sales...(715) 386 - 8861

Made in the U.S.A.

ACA-1A Compatibility

To use a Viking ACA-1A on your Electronic Key System you must be able to do the following:

a. Connect a standard "2500" single line phone directly or via an OPX station card.
b. Program your key system to send incoming calls to the "2500" phone.
c. The "2500" phone must be able to answer, then hookswitch flash and blind transfer* the call to another extension.
d. If the other extension is busy, the "2500" phone must be able to get the incoming call back to advise *"The extension is busy."*

A blind transfer means that the "2500" set hookswitch flashes, dials an extension, but does not require that extension to answer before releasing the call.

Manufacturer and Model	Compatible	Software Required	Busy Protocol Sw1	Sw2
ATLAS	Yes			
AT&T				
Horizon	Yes		On	On
Dimension	Yes		On	On
Com-Key 416	No			
Merlin	Yes		On	On
Merlin 1030/3070	Yes		On	On
820D	Yes		On	On
Merlin II	Yes		On	On
Merlin Plus	Yes		On	On
Partner	Yes		On	On
Partner Plus	Yes		On	On
System 25/75/85	Yes		On	On
CENTREX	Yes		On	On
CMX				
Citation 1648	No			
COMDIAL				
1024B	Yes	AA1-CSS	Off	Off
Executech 1432	Yes	AA1-CSS	Off	Off
2232	Yes	AA1-CSS	Off	Off
2264	Yes	AA1-CSS	Off	Off
2296	Yes	AA1-CSS	Off	Off
In Touch 22/32	Yes	AA1-CSS	Off	Off
64/96/128	Yes		Off	Off
EC60PT	Yes		Off	Off
System 2000 (all)	Yes		Off	Off
Digitech (all)	Yes		Off	Off
Unisyn TO616	Yes		Off	Off
CSE				
Criterion	No			
ERICSSON				
Prodigy	Yes			
EXECUTONE				
Encore CX	Yes	AA1-ECX	Off	Off
FUJITSU				
Focus 50	Yes			
Focus 196	Yes	AA1-FJS		
Elite	Yes	AA1-FJS		
GALAXY				
Delta 2464	Yes	AA1-DEL	Off	Off
Delta 514/824/1232	No			
HARRIS				
All PABX's	Yes	AA1-HAR	Off	Off
HATACHI				
All PABX's	Yes			
INTEL				
SCX80	Yes		Off	Off
INTERTEL				
GMX48	Yes		Off	Off
Aires 616	No			
EKS 1664	No			
Hitec Phoenix	No			
824/1232	No			
GLX/IMX 84	Yes		Off	Off
ISOTECH	No			

Manufacturer and Model	Compatible	Software Required	Busy Protocol Sw1	Sw2
ITT				
501 (1A2)	No			
3100/ECS56/136	Yes		Off	Off
IWATSU				
Omega III	No			
Omega IV	Yes		On	On
IDSI28	Yes			
JISTEL				
95/200	Yes			
KANDA				
EK616	No			
Keystar 616	No			
MACROTEL				
Excel 308/616	No			
16H	Yes			
MARSHALL				
TLC412	No			
ST-B616	No			
MARUBENI				
DX-H1240/2470	No			
MITEL				
SX20/50	Yes		Off	Off
Analog SX100/200	Yes		Off	Off
Digital SX200	Yes		Off	Off
NAKAYO				
DKX32/88	Yes			
NEC				
Electromark II	Yes			
824	Yes	AA1-824		
2400/12A	Yes			
1648	No			
Electra 824	No			
Electra Pro II	Yes			
NIPPON				
All PABX's	Yes			
NORTHCOM				
Premier/1648	Yes			
N. TELECOM				
SL-1	Yes			
Meridian Norstar	Yes	AA1-ATA		
Vantage/1A3	No			
NORTHWEST BELL				
Integra 208/412	No			
Integra 616	No			
OKI				
PABX's	Yes			
Discovery III	Yes			
OPTIMA				
Digital Key	No			
PANASONIC				
VA (all)	No			
DBS (all)	Yes		Off	Off
KX-T-ESS (all)	Yes		Off	Off
EMS-336	Yes		Off	Off

Manufacturer and Model	Compatible	Software Required	Busy Protocol Sw1	Sw2
PREMIER				
1648	Yes		Off	Off
SLS	Yes		Off	Off
PROSTAR				
120	Yes		Off	Off
816/DCS	Yes		Off	Off
ROLM				
Redwood	Yes			
PABX	Yes	AA1-RLM		
SAMSUNG				
816	Yes		Off	Off
SANYO				
S6120/6160	No			
SIEMENS				
SD-192/192MX	Yes		Off	Off
SD232	No			
8-16/12-24/20-40	No			
S.W. BELL				
246	No			
STC				
Prostar 120/816	Yes		Off	Off
Pro-XL 616/1032	No			
TADARAN				
Emerald	Yes		Off	Off
Coral	Yes		Off	Off
TELRAD				
2464	Yes		Off	Off
2464 with VOS software	Yes	AA1-RAD	Off	Off
818 Digital	Yes		Off	Off
TIE				
TCX 128	No			
Businesscom Plus (all)	Yes		Off	Off
Businesscom 16/32	No			
Businesscom 2260	No			
DSOI/Onyx/OnyxII	Yes		Off	Off
Ultracom AT/UMT	Yes		Off	Off
Ultracom TC12	Yes		Off	Off
TOSHIBA				
DK16/DK280	Yes		Off	Off
Strata 6E/DK56/DK96	Yes		Off	Off
Perception	Yes		Off	Off
TRILLIUM				
Panther	No			
Panther II	Yes		Off	Off
VODAVI				
308EX	Yes			
616EX/616Flex	Yes			
2448/96EX	Yes			
Digital Systems (all)	Yes			
STX/1224 EX	Yes			
WALKER (WIN)				
100D	Yes		Off	Off
Marathon	Yes		Off	Off
Poet/24A	Yes		Off	Off
Reliant	No			

Installation

- To protect the micro-processor and provide maximum efficiency, the installation of a surge protector is recommended.

- The **ACA-1A** uses non-volatile message storage. In the event of a power loss, the messages and programming will be retained indefinitely. For applications requiring full operation during power failures, use a commercially available uninterruptable power source (UPS).

A. Behind a PABX or Electronic Key System

Connect the **ACA-1A** to an analog PABX/KSU or OPX station.

120V AC

Rear view of the ACA-1A

C.O. Lines

Extensions

Analog PABX/KSU or OPX station

USE ONLY LISTED
CLASS 2 POWER SOURCE

PROTOCOLS 12V 0.5 A MAX CO/PABX LINE

1 2 3 4
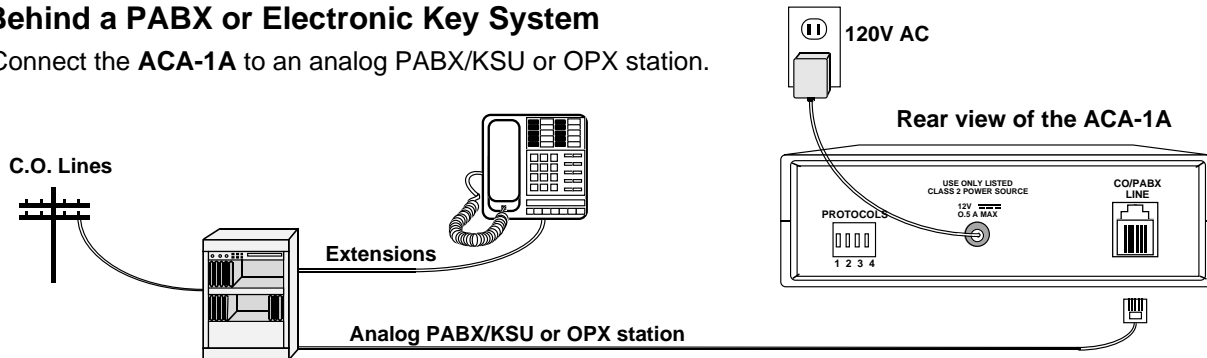
B. Behind Centrex Telephone Lines

Note: Use ground start lines for fastest call processing.

120V AC

Rear View of the ACA-1A

Centrex Telephone Line

USE ONLY LISTED
CLASS 2 POWER SOURCE

PROTOCOLS 12V 0.5 A MAX CO/PABX LINE

1 2 3 4

Programming

VIKING ©   **AUTOMATED ATTENDANT**
MODEL ACA-1A

TAPE

REC/MON   LED   VOL   PLAY   REC   START

- - - - **Start Button**
- - - - **Play/Record Switch**
- - - - **Playback Volume Control**
- - - - **Status Indicator**
- - - - **Tape Input**

Standard carbon handset
(not included)
Viking Model W-3610
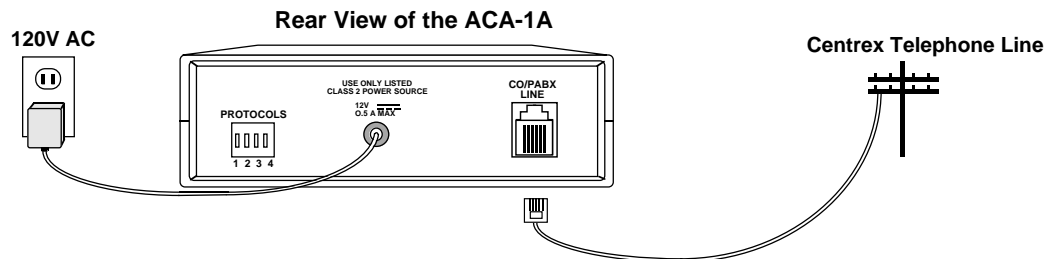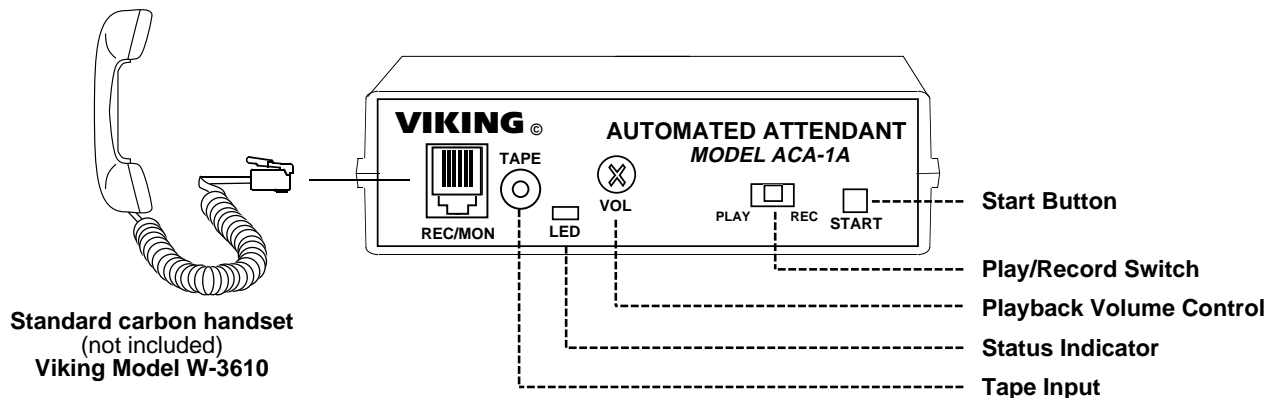
A. Security Code (memory location #47)

The security code allows the **ACA-1A** to be programmed remotely. The factory set code is 845464 (V-I-K-I-N-G). It is recommended that the security code be changed after installation.
Note: The security code must have six digits and cannot contain a ✶ or #.

B. Accessing the Programming Mode

1. From a Touch Tone phone, call the line attached to the **ACA-1A**.

2. When the **ACA-1A** answers, enter a "✶".

3. When the recording stops, enter the six digit security code (see section **A**).

4. To leave the programming mode, simply hang-up. The **ACA-1A** will time out after 20 seconds and disconnect.

C. Speed dial numbers

Up to 10 speed dial memory locations can be programmed ((9) 16 digit, (1) 32 digit).
*Note: Special characters such as ✶'s, #'s and pauses require 1 digit (see section **J. Programming Features**).*

Actual Number	Access Code	Department/ Location		Actual Number	Access Code	Department/ Location
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _	#01	_____		_ _	#07*	_____
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _	#02	_____				
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _	#03	_____		_ _ _ _ _ _ _ _ _ _ _ _ _ _ _	#08*	_____
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _	#04	_____		_ _ _ _ _ _ _ _ _ _ _ _ _ _ _	#09*	_____
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _	#05	_____		_ _ _ _ _ _ _ _ _ _ _ _ _ _ _	#00*	_____
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _	#06	_____		* see "**Special Speed Dial Memory Positions**"		

D. Special Speed Dial Memory Positions

1. Memory Position 07

Memory position 07 can store up to 32 digits for international numbers or pager numbers.

2. Memory Position 08

Memory position 08 can be used to store the appropriate Touch Tone code needed to re-access a call transferred to a busy extension (see section **E**, DIP Switch Programming). This memory position may also be used as a standard speed dial position if this feature is not required.

3. Memory Position 09

Memory position 09 is reserved for the extension a caller will default to if a Touch Tone code is not entered during the "busy" announcement or within 2.5 seconds after. This memory position may also be used as a standard speed dial position by dialing a 9.

4. Memory Position 00

Memory position 00 is reserved for the extension a caller will default to if a Touch Tone code is not entered during the "answer" announcement or within 6 seconds thereafter. The **ACA-1A** can be forced to hang-up if no selection is made by moving DIP switch 4 to the ON position (see section **E**).

5. Unprogrammed Memory Positions

Unused speed dial memory positions should be programmed to duplicate memory position 00.

6. Extension Numbers that Begin with a "0"

Callers that attempt to dial an extension number that begins with a "0" will be transferred to the extension number programed into memory position 00.

7. Maximum Busy Extension Attempts

After three attempts to a busy extension, the caller will be transferred to the extension number programmed in memory position 09.

E. DIP switch programming

Four DIP switches are provided on the back of the **ACA-1A** to program busy protocols, operational modes, etc.

Rear View of the ACA-1A

USE ONLY LIMITED CLASS 2 POWER SOURCE
12V 0.5 A MAX
PROTOCOLS
CO/PABX LINE
1 2 3 4
ON
OFF
1 2 3 4
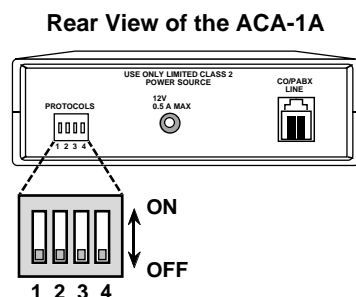
Switch 1	Switch 2	Description
OFF	OFF	Hook flash to reaccess a caller attempting to transfer to a busy extension
OFF	ON	Hang up required to reaccess a caller attempting to transfer to a busy extension
ON	OFF	Hook flash and Touch Tone code, memory pos. 08, required to reaccess a caller attempting to transfer to a busy extension
ON	ON	Double hook flash required to reaccess a caller attempting to transfer to a busy extension

Switch	ON/OFF	Description
3	ON OFF	Bilingual Mode Normal Mode
4	ON OFF	**ACA-1A** drops the line if the caller does not make a selection Normal operation

F. Ring Delay (memory location #45)

The **ACA-1A** can be programmed to answer the incoming call after a preset number of rings. The ring delay number is stored in memory position #45 and can be set with any number between 1 and 9 (0 is not allowed).

G. Dialing speed

The dialing speed of the **ACA-1A** can be set for normal (4 Touch Tones per second) or fast (8 Touch Tones per second) speed. While in the programming mode, enter ✱4 to select fast speed dialing. If the phone system cannot accept fast speed dialing, enter ✱5 for normal speed.

H. Centrex mode

If the **ACA-1A** is being used in a Centrex application, it may take up to 15 seconds for a transfer to complete and the **ACA-1A** must allow for this delay. If the application requires this additional delay, select the Centrex mode by entering ✱6 while in the programming mode (see section **B**). The period of delay can be adjusted by programming memory position **#44** with a number from 0 to 9 (see chart to the right).

Enter	Delay in Seconds
0	6*
1	7
2	8
3	9
4	10
5	11
6	12
7	13
8	14
9	15

* Factory Default

I. Recording

All recordings must be made consecutively in the order shown in the chart below, right. *Note: All announcements must be recorded for the **ACA-1A** to operate properly. If no announcement is desired, a 1 second moment of silence must be recorded.*

1. Local Recording

a. Insert a carbon handset into the **REC/MON** jack or connect a tape player to the **TAPE** jack.

b. Set the **Play/Record** switch to the **REC** position.

Note: The LED will flicker with the audio level. Use this to set the audio level when down loading from a tape. The optimum audio level is reached when the LED flickers but is not mostly on or mostly off.

Record Order Normal Mode		Record Order Bilingual Mode*	
1	Greeting	1	Greeting in both languages
2	Transfer	2	Language 1 Greeting
3	Busy	3	Language 1 Transfer
		4	Language 1 Busy
		5	Language 2 Greeting
		6	Language 2 Transfer
		7	Language 2 Busy

* Dip Switch 3 must be set to ON prior to recording.

c. Momentarily press the **START** button, wait for the start tone, then begin speaking or start your tape player. When finished press the button again.

d. Repeat step **c** for the remaining messages (see chart to the right).

Note: LED indicates overflow by flashing high/low.

e. To review all the announcements, set the **PLAY/RECORD** switch to the **PLAY** position and momentarily press the **START** button.

Note: LED indicates playback by flashing on/off.

2. Remote Recording

a. Access the programming mode (see section **B**.).

b. Enter ✱**1**, wait for the start tone, then begin speaking. When finished, enter any Touch Tone.

c. Enter ✱**2** to record each additional message (up to 7 total, see chart above).

Note: Three beeps indicate overflow and errors.

d. To review all of the announcements, enter ✱**3**.

e. If a mistake is made, use ✱**1** to start recording from the beginning

Recording Tips & Hints

• Write a script for each announcement. Before recording, read the script while timing yourself. Remember, total record time cannot exceed 60 seconds.

• For faster call processing, keep your "greeting" announcement short. The unit will not answer additional calls until a call has been transferred!

"Greeting" Example: "Viking Electronics. Please press 1 for sales, 2 for product support or 3 for customer service. If you do not have a Touch Tone phone, stay on the line for an operator."

"Transfer" Announcement Example: "Please hold while your call is transferred."

"Busy" Announcement Example: "That extension is busy. Please make another selection or dial 0 to talk to the operator."

J. Programming Features

	Digits	+	Location
Record from start (remote only)	**∗1**		
Record next message (remote only)	**∗2**		
Playback from start (remote only)	**∗3**		
Set dialing speed to fast (8 Touch Tones per second)	**∗4**		
Set dialing speed to normal (4 Touch Tones per second - factory setting)	**∗5**		
Enable Centrex Mode	**∗6**		
To add a four second pause at any point in the dialing string	**∗7**		
Disable Centrex mode (factory setting)	**∗8**		
Standard speed dial memory positions (1 - 16 digits)	1 - 16 digits	**+**	**#00-#06**, **#08**, **#09**
Extended speed dial position (1 - 32 digits)	1 - 32 digits	**+**	**#07**
Centrex delay	0 - 9	**+**	**#44**
Ring delay	1 - 9	**+**	**#45**
Security code (factory set to 845464)	6 digits	**+**	**#47**
To program a "∗" at any point in the dialing string	**∗∗**		
To program a "#" at any point in the dialing string	**∗#**		

Operation

The **PLAY/REC** switch must be set to **PLAY** for the **ACA-1A** to answer. Volume of the messages may be adjusted with the volume control.

A. Normal Mode (DIP switch 3 Off)

The **ACA-1A** will process approximately 4 calls a minute. When an inbound call is detected, the **ACA-1A** will answer the call with a user recorded announcement.

The **ACA-1A** then allows you to reach up to 10 departments by entering a single digit speed-dial memory location number. Callers familiar with the system can easily interrupt the menu by dialing an extension number at any time. If the caller enters a "0" or fails to enter a number, the call will be sent to a user-programmable default number. After entering a department code or direct extension number, the **ACA-1A** confirms the caller's selection with a "transfer" announcement. If the incoming call is transferred to a busy extension, a "busy" announcement will give the caller instructions.

If a break in loop current is detected prior to the **ACA-1A** making a transfer, the **ACA-1A** will drop the line. This CPC feature is used in some systems to signal the **ACA-1A** that the calling party has disconnected.

Note: *If a caller enters an extension longer than 8 digits or attempts 8+ or 9+ dialing, the call will be disconnected.*

B. Bilingual Mode (DIP switch 3 On)

The Bilingual mode operates similarly to the normal mode except it allows the messages to be recorded in two different languages. In this mode, a main greeting is issued that should direct the caller to enter a Touch Tone "5" if they want the language 1 messages. Once this selection is made, the operation is the same as the normal mode. The messages include the following:

1. **Main Greeting:** This greeting should provide instructions in both languages.
2. **Language 1 Greeting:** The greeting played if a Touch Tone 5 is entered during the main greeting.
3. **Language 1 Transfer Message:** The message played during a transfer if language 1 is selected.
4. **Language 1 Busy Message:** The message played when a busy extension is reached if language 1 is selected.
5. **Language 2 Greeting:** The greeting played if any other numerical key is pressed.
6. **Language 2 Transfer Message:** The message played during a transfer if language 2 is selected.
7. **Language 2 Busy Message:** The message played when a busy extension is reached if language 2 is selected.

Optional Software

The **Multiple Directory Software**, model **AA1-MD**, provides multi-leveled directory announcements to help callers reach the correct extension.

For more information on this option, call **Viking's Fax Back System** at **(715) 386-4345** and retrieve document **828**.

Product Support Line...(715) 386-8666   *Fax Back Line...(715) 386-4345*